



# ecology and environment, inc.

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International Specialists in the Environment

## MEMORANDUM

DATE: January 12, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

THRU: <sup>for</sup> David Buecker, FIT-OM, E&E, Seattle *DAT*

FROM: Joseph B. Hunt, FIT-PM, E&E, Seattle *JBH*  
Karl A. Morgenstern, FIT-SM, E&E, Seattle *JBH for KAM*

SUBJ: Estimated Project Cost for  
Spokane Junkyard and Associated Sites

REF: TDD F10-8712-03

CC: Deborah Flood, HWD-SM, USEPA, Region X  
David Bennett, NPL Coordinator, USEPA, Region X  
Glenn Bruck, Hydrogeologist, USEPA, Region X  
Thomas Tobin, E&E, Seattle (memo only)

Enclosed is the projected level of effort for the various matrix-specific data collection tasks pertinent to the Spokane Junkyard HRS II Field Test. Also included are unit and total analytical costs resulting from the anticipated sample summary. No special equipment or subcontracting costs are contained within the project scope.

JBH:neg

Enclosures





TABLE 1

**PROJECTED LEVEL OF EFFORT (LOE) FOR  
SPOKANE JUNKYARD AND ASSOCIATED SITES**

Task Description	Projected LOE
<b>Project Management</b>	<b>89</b>
<b>Background Research</b>	
Ground Water	
Aquifer Identification	2
Hydraulic Conductivity	2
Sorptive Capacity	2
Well Locations	2
Population Served (GW)	2
Ground Water Containment	1
Subtotal Hours	11
<b>Surface Water</b>	
Overland Flow Patterns	1
Topography	N/A
Drainage Area	N/A
Predominant Land Use	N/A
Hydrologic Soil Groups	N/A
Flow Rate Determinations	N/A
Flood Plain Determinations	N/A
Drinking Water Intake Locations	N/A
Population Served	N/A
Sensitive Environment Locations	1
Sensitive Environment Types	1
Fisheries Productivity	N/A
Closed Fisheries	N/A
Fisheries Use Category	N/A
Recreation Areas Category	N/A
Recreation Areas Access/Attract	N/A
Recreation Areas Population	N/A
Surface Water Containment	1
Subtotal Hours	4



TABLE 1 (Cont.)

**PROJECTED LEVEL OF EFFORT (LOE) FOR  
SPOKANE JUNKYARD AND ASSOCIATED SITES**

Task Description	Projected LOE
Air	
Local Climate	1
Source Areas Dimensions/Locations	1
Source Types	1
Nearest Buildings	1
Sensitive Environment Locations	1
Land Uses	1
Air Containment	1
Subtotal Hours	7
On Site	
Source Areas Dimensions/Locations	1
Source Areas Accessibility	1
Source Areas Frequency of Use	1
Resident Population	1
Nearby Population	1
High-Risk Population	41
Topography Between Sample Points	1
Subtotal Hours	47
Site Visit	
Site Contacts	N/A
Site Visit	20
Trip Report	N/A
Subtotal Hours	20
Work Plan Development	
SAC Meeting	10
EPA Presentation	2
Work Plan Draft	150
Safety Plan Draft	2
Equipment List Prep.	1
Subcontractor Specs Prep.	N/A
Work Plan Graphics	30
Subtotal Hours	195



TABLE 1 (Cont.)

PROJECTED LEVEL OF EFFORT (LOE) FOR  
SPOKANE JUNKYARD AND ASSOCIATED SITES

Task Description	Projected LOE
Site Sampling	
Personnel Mobilization/Demobilization	24
Equipment Mobilization/Demobilization	24
Travel	36
Site Survey	N/A
Sample Collection	
Domestic Wells	20
Monitoring Wells	N/A
Surface Water/Water	N/A
Surface Water/Sediment	N/A
Surface Water/Benthos	N/A
Surface Water/Fish Tissue	N/A
Surface Soil	190
Subsurface Soil	30
Air/Field Analyses	N/A
Air/Laboratory Analyses	N/A
Geophysics	N/A
Subcontractor Supervision	N/A
Slug Test/Pump Test	N/A
Decontamination/Waste Disposal	60
Sample Documentation	60
Site Safety	60
Sample Packaging/Shipping	20
Subtotal Hours	523
Final Draft Prep.	
Quality Assurance Review	430
Draft Prep.	80
Graphics	20
Data Interpretation	20
HRS II Score/Documentation	40
HRS I Score/Documentation	2
Cost Analysis	4
EPA 2070-13	4
Peer Review/Editing	40
Publications	30
EPA Presentation	2
Subtotal Hours	672
TOTAL HOURS	1,568



**TABLE 2**  
**CLP ANALYTICAL COSTS**

Sample Type	Sample Number	QA/QC Samples	Analytical Requirements	Unit Cost	Total Cost
On-Site Surface Soil	7	3	PCB Metals	407 120	4070 1200
Off-Site Surface Soil	37	7	PCB Metals Asbestos	407 120 50	17908 5280 2200
Domestic Surface Soil	14	3	PCB Metals Asbestos	407 120 50	6919 2070 850
Soil Boring	20	3	PCB Metals	407 120	9361 2760
Domestic Ground Water	8	2	PCB BNA VOA Metals	407 270 230 120	4070 2700 2300 1200

**TABLE 3**  
**EPA LABORATORY ANALYTICAL COST**

Sample Type	Sample Number	Analytical Requirements	Time Required For Analysis
Soil Boring	20	Grain Size Total Organic Carbon	2.8 hrs. 0.3 hrs.